

REMARKS/ARGUMENTS

Claims 20, 24, 35, 37, 50, and 51 are currently pending in this application, in which claim 37 is independent.

Applicants wish to thank the Office for withdrawing the rejections under 35 U.S.C. § 102. Applicants agree that the claimed invention is not anticipated by the references of record. However, in view of the disclosures of the references, as disclosed below, Applicants also believe that the claimed invention is not obvious. Accordingly, reconsideration of the claimed invention is requested in view of the following remarks.

Rejection over Hartman in view of Li

The rejection of claims 37, 50, 30, 35, and 24 under 35 U.S.C. § 103(a) as obvious over Hartman et al. (US 2001/0036052) and Li et al. (US 2002/0022278) is respectfully traversed.

There is no suggestion or motivation that one would modify Hartman et al. with any aspect of Li et al. to achieve the claimed invention, since the references describe different film/layer materials *and* techniques. Therefore, for at least this reason, the rejection should be withdrawn.

In particular, as the Office is aware, obviousness requires, *inter alia*, that there be a desirability to combine references. “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” (MPEP § 2143.01, citing In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)). Moreover, as mentioned in In re Fulton, 391 F.3d 1195, 1200-01, 73 USPQ2d 1141, 1145-46 (Fed. Cir. 2004, the Federal Circuit emphasized that the proper inquiry is “whether there is something in the prior art as a whole to suggest the *desirability*.” (Id.) (Emphasis added and in original). Further, there must be a reasonable expectation of success in making the combination, which requires some degree of predictability that the combination would be successful. (See MPEP § 2143.02).

Regarding Hartman et al., the reference relates to a dielectric substrate for printed wiring boards, in which the dielectric substrate comprises at least one *organic polymer* having a Tg greater than 140°C and at least one *filler material*, i.e., a ferroelectric particle filler. (See para. [0003] of the reference). It is noted that the only particles described and/or exemplified in the

reference are: “barium titanate, strontium titanate, barium neodymium titanate, barium strontium titanate, magnesium zirconate, titanate dioxide, calcium titanate, barium magnesium titanate, lead zirconium titanate and mixtures thereof.” (*See* para. [0021] of the reference). It is also noted that barium strontium titanate nanoparticles are preferred, and any particles that are produced by a heating or sintering process are completely excluded. (*See* para. [0021] of the reference).

By contrast, Li et al. relates only to ferroelectric *lead germanium oxide (PGO) thin films* for memory devices, in which the crystallization of the films have complete c-axis orientation. In particular, there is no disclosure or indication of any use of titanates, resin or polymeric materials, or any nanoparticles. (*See* paragraphs [0001] to [0029] of the reference). It is noted that the grain size described in the reference clearly does not refer to nanoparticles, but to the crystal grains within the crystal structure of the films. As such, based on the different materials, one would clearly not find it desirable to modify Hartman et al. with the disclosure of Li et al. to achieve the claimed invention.

Moreover, it is noted that the PGO films of Li et al. are prepared on wafers by metal organic vapor deposition (MOCVD) and RTP (Rapid Thermal Process) annealing techniques. Specifically, the films are formed by mixing $[Pb(thd)_2]$ and $[Ge(ETO)_4]$ to form a PGO mixture, dissolving the mixture with a solvent, heating the precursor solution with a precursor vaporizer, and creating a *precursor gas*; and *decomposing the precursor gas on a wafer*, which is attributed to the crystalline structure and grain size within the films. (*See* paragraphs [0012] to [0021] of the reference).

By contrast, the dielectric layers of Hartman et al. are formed by combining the particle filler (a titanate) with resin, the particle containing resin mixture is then coated onto a conductive metal layer, and then the particle containing resin is dried to remove solvent from the resin. (*See* para. [0026] and Example 1 of the reference). As such, based on these vastly different techniques, there clearly would not be any expectation of success in combining Hartman et al. with the disclosure of Li et al. to achieve the claimed invention.

Therefore, in view of the above reasons, the rejection is improper, since the combination does not meet the minimum standards for obviousness. Accordingly, withdrawal of the rejection is requested.

Rejection over Hartman in view of Li, and Further in view of Constantino

The rejection of claim 51 under 35 U.S.C. § 103(a) as obvious over Hartman et al. in view of Li et al., and further in view of Constantino et al. (US 2001/0048969), is respectfully traversed. As discussed above, it clearly would not be obvious to combine Hartman et al. in view of Li et al. to achieve the claimed invention. Moreover, Constantino et al. does not cure the deficiencies of the combination.

In particular, Constantino et al. does not even describe or relate to dielectric *substrate layers* for forming printed wiring board capacitors (Hartman et al.), or any *films* for making transistor memory cells (Li et al.). To the contrary, Constantino et al. provides an entirely different invention relating to *coated* particles, i.e., barium titanate-based particles having a coating comprising a metal oxide, metal hydrous oxide or metal hydroxide or mixtures thereof. (See para. [0029] of the reference). Moreover, there is no indication or evidence that such coated barium titanate-based particles would be useful or compatible in the particle/resin based layers of Hartman et al. Therefore, the rejection is improper. Accordingly, withdrawal of the rejection is requested.

In view of the above remarks, Applicants believe the pending application is in condition for allowance.

Applicants believe no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-0510, under Order No. 20140-00343-US2 from which the undersigned is authorized to draw.

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Respectfully submitted,

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